

# Shunosaurus

*Shunosaurus*, meaning "shu lizard", is a genus of sauropod dinosaur from Late Jurassic (Oxfordian) beds in Sichuan Province in China, approximately 159±2 million years ago.<sup>[1]</sup> The name derives from "Shu", an ancient name for the Sichuan province.

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## Discovery and species



Skeletal cast mount, Tianjin Natural History Museum

The first fossil of *Shunosaurus* was discovered in 1977 by a group of students, practising paleontological excavation at a road bank. The type species, *Shunosaurus lii*, was described and named by Dong Zhiming, Zhou Shiwu and Zhang Yihong in 1983. The generic name

derives from "Shu", an ancient name for Sichuan. The specific name honours hydrologist Li Bing, the governor of Sichuan in the third century BC.<sup>[2]</sup>

The holotype, IVPP V.9065, was collected from the Lower Xiashaximiao Formation near Dashanpu, Zigong. It consists of a partial skeleton. Later about twenty more major specimens were discovered, including several complete or near-complete skeletons, skulls and juveniles,<sup>[3]</sup> making *Shunosaurus* one of the best anatomically known sauropods, with 94% of all skeletal elements identified. *Shunosaurus* skeletons are on display at the Zigong Dinosaur Museum in Zigong, Sichuan Province, and the Tianjin Natural History Museum.

### Shunosaurus

**Temporal range:** Late Jurassic, 159 Ma

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Mount in the Finnish Museum of Natural History

#### Scientific classification

Kingdom:	Animalia
Phylum:	Chordata
Clade:	Dinosauria
Clade:	Saurischia
Suborder:	†Sauropodomorpha
Clade:	†Sauropoda
Clade:	†Eusauropoda
Genus:	† <i>Shunosaurus</i> Dong <i>et al.</i> , 1983
<b>Type species</b>	
† <i><b>Shunosaurus lii</b></i> Dong <i>et al.</i> , 1983	
<b>Other species</b>	
▪ † <i><b>Shunosaurus jiangyiensis</b></i> Fu & Zhang, 2004	

A second species, *S. ziliujingensis*, a name mentioned in the Zigong museum guide to indicate a smaller and older form, has never been formally described, and thus remains a *nomen nudum*.

## Description

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*Shunosaurus* was first estimated to be 11 metres (36 ft) long; later and more complete finds indicated a somewhat smaller size. In 2010 Gregory S. Paul estimated the length at 9.5 metres (31 ft), the weight at 3 metric tons (3.3 short tons).<sup>[4]</sup> *Shunosaurus* was very short-necked for a sauropod, being only "surpassed" in this respect by *Brachytrachelopan*.<sup>[5]</sup> The skulls found are mostly compressed or disarticulated and the interpretation of the head form has varied from broad, short and deep<sup>[6]</sup> to extremely narrow and pointed.<sup>[7]</sup> The upper and lower jaws were strongly curved upwards, allowing them to function as a pair of garden shears. The teeth were fairly robust but elongated with a crown length of up to 8 centimetres (3.1 in). They show a unique combination of a cylindrical body ending in a spatulate tip. In 1989 it was disclosed that the tail ended in a club,<sup>[8]</sup> equipped on its top with two successive spikes formed by 5 centimetres (2.0 in)-long cone-shaped osteoderms probably used to fend off enemies.



Life restoration



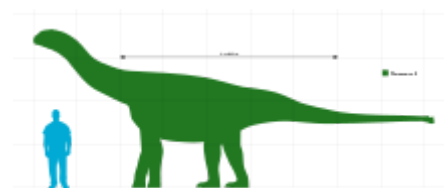
Skull

## Classification

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*Shunosaurus* was originally classified as a member of the Cetiosaurinae; in 1992 Dong assigned it to Shunosaurinae within the Cetiosauridae.<sup>[9]</sup>

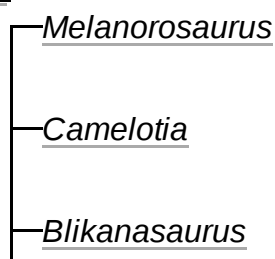
Cladistic analyses have rendered conflicting results. In 1995 Paul Upchurch published a study in which *Shunosaurus* belonged to the Euhelopodidae together with other Jurassic Chinese sauropods.<sup>[10]</sup> However, an analysis by Jeffrey Wilson in 2002 indicated it had a very basal position within the Eusauropoda.<sup>[11]</sup> *Shunosaurus* is perhaps related to *Rhoetosaurus* from Queensland in Australia.

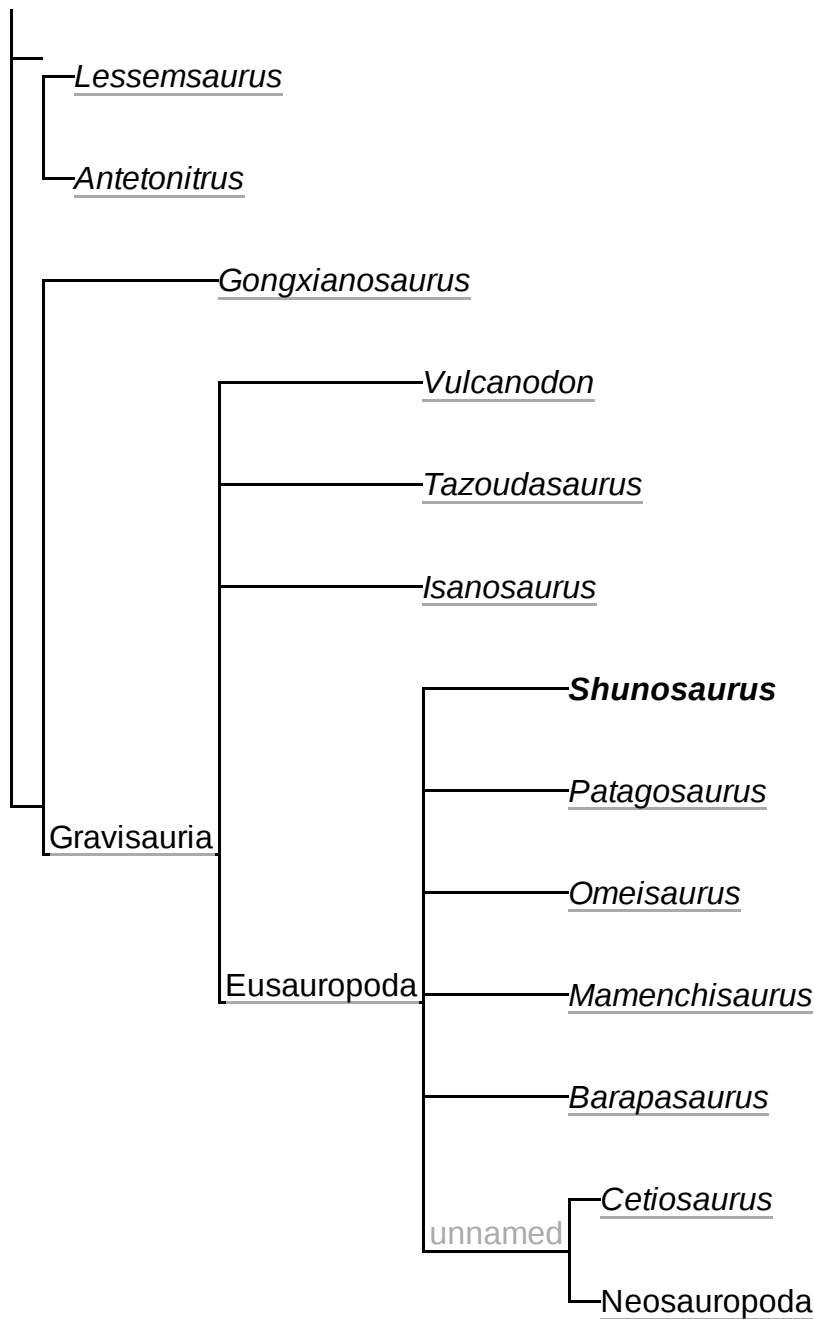


Size comparison

The cladogram below shows a possible phylogenetic position:<sup>[12]</sup>

### Sauropoda

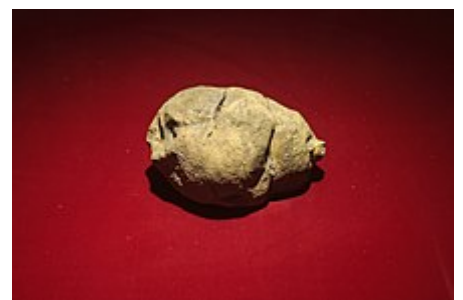




## Paleobiology

Its neck length indicates that *Shunosaurus* was a low browser. The form of its jaws is well-adapted to processing large amounts of coarse plant material.<sup>[13]</sup>

*Shunosaurus* accounts for 90% of the fossils found in the Dashanpu fauna, showing it was a dominant and/ or common member of its habitat and environment. It shared the local Middle Jurassic landscape with other sauropods, *Datousaurus*, *Omeisaurus* and *Protognathosaurus*, the possible ornithopod *Xiaosaurus*, and the early stegosaur *Huayangosaurus*, as well as the carnivorous theropod *Gasosaurus*.



Tail-club

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